

CLAIM AMENDMENTS

1 1 (currently amended): A method of using a pull cord operatively connected to a
2 rotatable shaft to reversibly rotate the shaft, the method comprising the steps:

3 (a) pulling a pull cord in a first direction, thereby rotating a first shaft in a
4 selected direction and converting rotation of the first shaft into rotation of a second shaft in
5 a first direction;

6 (b) retracting the pull cord; and

7 (c) pulling the pull cord in a second direction, different from the first direction
8 of the pull cord, thereby rotating the first shaft in the selected direction and converting
9 rotation of the first shaft into rotation of the second shaft in a second direction, opposite the
10 first direction of rotation of the second shaft.

1 2 (original): A method of using a pull cord operatively connected to a rotatable shaft
2 having a load attached thereto to selectively rotate the shaft in opposite directions and thereby
3 position the load, the method comprising the steps:

4 (a) pulling a pull cord in a direction selected from first and second, different
5 pull directions, thereby rotating a first shaft in a selected direction and converting rotation
6 of the first shaft in the selected direction into rotation of a second shaft in a direction selected
7 from first and second, opposite directions of rotation, the first and second directions of
8 rotation being selected by the first and second pull directions, respectively;

9 (b) returning the pull cord; and

10 (c) repeating steps (a) and (b).

1 3 (currently amended): A reversible pull cord mechanism, comprising:
2 first and second rotatable shafts;
3 a pull cord operatively connected to the first shaft and to the second shaft for
4 rotating the first shaft in a selected direction when the pull cord is pulled;
5 means operatively connected to the pull cord and responsive to pulling the pull
6 cord in at least two different directions for rotating the first shaft in the selected direction
7 when the pull cord is pulled in either of said two different directions; and
8 means operatively connected to the first shaft and to the second shaft and
9 responsive to pulling the pull cord in said two of said different directions for converting
10 rotation of the first shaft in the selected direction into rotation of the second shaft in two
11 opposite directions, respectively.

1 4 (original): A reversible pull cord mechanism, comprising:
2 first and second rotatable shafts;
3 a pull cord operatively connected to the first shaft for rotating the first shaft in
4 a selected direction when the pull cord is pulled;
5 means for retracting the pull cord;
6 means for converting rotation of the first shaft in the selected direction into
7 rotation of the second shaft, said converting means being settable in first and second
8 conditions for converting rotation of the first shaft in the selected direction into rotation of
9 the second shaft in first and second different directions, respectively; and
10 means responsive to pulling movement of the pull cord in first and second
11 different directions for selectively setting the converting means in the first and second
12 conditions, respectively, as the pull cord is pulled.

1 5 (original): A reversible pull cord mechanism, comprising:

2 a retractable pull cord mechanism comprising: a first rotatable shaft; a pulley
3 operatively connected to the first rotatable shaft for rotating the first rotatable shaft a pull
4 cord wrapped around the pulley for rotating the pulley and the first rotatable shaft when the
5 pull cord is pulled away from the pulley; and means operatively connected to the first
6 rotatable shaft for rewinding the pull cord when the pull cord is released;

7 a second rotatable shaft operatively connected to the first rotatable shaft for
8 rotating the second rotatable shaft when the first rotatable shaft rotates;

9 means adapted for positioning in first and second positions for converting
10 single direction rotation of the first rotatable shaft into rotation of the second rotatable shaft
11 in first and second different directions; and

12 means connecting the pull cord to the converting means for setting the
13 converting means in said first and second positions in response to the pull cord being pulled
14 in first and second different directions.

1 6 (original): A reversible rotation pull cord mechanism, comprising:

2 a retractable pull cord mechanism, comprising: a first rotatable shaft; a pulley
3 operatively connected to the first rotatable shaft for rotating the first rotatable shaft a pull
4 cord wrapped around the pulley for rotating the pulley and the first rotatable shaft when the
5 pull cord is pulled away from the pulley; and rewind means operatively connected to the first
6 rotatable shaft for rewinding the pull cord when the pull cord is released;

7 a transmission including a second rotatable shaft operatively connected to the
8 first rotatable shaft for rotating the second shaft when the first shaft rotates; the transmission
9 further comprising shifting means adapted for being positioned in at least first and second

10 positions for converting single direction rotation of the first rotatable shaft into rotation of
11 the second rotatable shaft in first and second different directions; and

12 connecting means connecting the pull cord to the shifting means for setting the
13 transmission in said first and second positions in response to the pull cord being pulled in
14 first and second different directions.

1 7 (original): The reversible pull cord mechanism of claim 6, wherein:

2 the transmission comprises: a first gear operatively mounted on the first
3 rotatable shaft for rotating therewith in a first direction; a second gear meshed with the first
4 gear for rotating in a second direction, opposite the first direction; and a third, output gear;
5 and wherein

6 the shifting means comprises fourth and fifth gears; a movable shaft mounting
7 the fourth and fifth gears at spaced apart locations along said movable shaft with the fifth
8 gear maintained meshed with the third, output gear; said movable shaft being mounted for
9 arcuate movement between said first position, at which the fourth gear meshes with the first
10 gear for rotating the fifth gear with the first gear and said second position, at which the fourth
11 gear meshes with the second gear for rotating the fifth gear with the second gear; and
12 wherein

13 said connecting means operatively connects the pull cord means to said
14 movable shaft for moving said movable shaft to the said first and second positions.

1 8 (original): The reversible pull cord mechanism of claim 7, said connecting means
2 further comprising: first spring means comprising a first arm or section mounted proximate
3 the shifting means for rotating movement; a second arm or section mounted proximate one
4 end to and extending from the first arm and mounted proximate a second end to the movable

5 shaft of the shifting means for moving the movable shaft between and to said first and second
6 positions upon rotation of the first arm; and a third arm mounted to and extending from the
7 first arm for rotating the first arm, thereby pivoting the second arm and moving the movable
8 shaft between and to said first and second positions.

1 9 (original): The reversible rotation pull cord mechanism of claim 6, wherein
2 the transmission comprises: a first gear operatively mounted on the first
3 rotatable shaft for rotating therewith in a first direction; a second gear meshed with the first
4 gear for rotating in a second direction, opposite the first direction; and a third, output gear;
5 and wherein

6 the shifting means of the transmission comprises fourth and fifth gears; a
7 movable shaft mounting the fourth and fifth gears at spaced apart locations along said
8 movable shaft with the fifth gear maintained meshed with the third, output gear; said
9 movable shaft being mounted for arcuate movement among and to said first position, in
10 which the fourth gear meshes with the first gear for rotating the fifth gear with the first gear,
11 said second position, in which the fourth gear meshes with the second gear for rotating the
12 fifth gear with the second gear, and a third, neutral position between said first and second
13 positions at which the fourth gear is disengaged from the first and second gears; and wherein
14 said connecting means operatively connects the pull cord to said movable shaft
15 for moving said movable shaft among and to said first, second and third positions.

1 10 (original): The reversible pull cord mechanism of claim 9, said connecting means
2 further comprising:

3 first spring means comprising a first arm or section mounted proximate the
4 shifting means for rotating movement; a second arm or section mounted proximate one end

5 to and extending from the first arm and mounted proximate a second end to the movable
6 shaft of the shifting means for moving the movable shaft among and to said three positions
7 upon rotation of the first arm; and a third arm mounted to and extending from the first arm
8 for rotating the first arm, thereby pivoting the second arm and moving the movable shaft
9 among and to said three positions; and the third arm having an aperture therein receiving the
10 pull cord in sliding engagement such that pulling the pull cord in first and second directions
11 moves the movable shaft to said first and second positions; and

12 second spring means mounted proximate the first spring means and having a
13 detent positioned such that when the pull cord is released, the detent releasably engages the
14 first spring means and positions the first spring means in said neutral third position, and
15 disengages from the first spring when the pull cord is pulled in the first or second direction.

1 11 (original): A pull cord-operated retractable cover system, comprising:

2 (1) a cover system comprising: a housing; a plurality of rotatable pulleys
3 mounted on or to the housing; a cover; cords wound around the pulleys and connected
4 to the cover for extending the cover from the housing and retracting the cover to the
5 housing; and

6 (2) a reversible pull cord mechanism, comprising:

7 (a) retractable pull cord means comprising: a first rotatable shaft; a
8 pulley operatively connected to the first rotatable shaft for rotating the first
9 rotatable shaft; a pull cord wrapped around the pulley for rotating the pulley
10 and the first rotatable shaft when the pull cord is pulled away from the pulley;
11 and means operatively connected to the first rotatable shaft for rewinding the
12 pull cord when the pull cord is released;

13 (b) a transmission including a second rotatable shaft and being
14 operatively connected to the first rotatable shaft for rotating the second
15 rotatable shaft when the first rotatable shaft rotates; the transmission further
16 comprising shifting means adapted for positioning in first and second positions
17 for converting single direction rotation of the first rotatable shaft into rotation
18 of the second rotatable shaft in first and second different directions; and

19 (c) means connecting the pull cord means to the shifting means and
20 setting the transmission in said first and second positions in response to the
21 pull cord being pulled in first and second different directions.

1 12 (original): The cover system of claim 11, wherein:

2 the transmission comprises: a first gear operatively mounted on the first
3 rotatable shaft for rotating therewith in a first direction; a second gear meshed with the first
4 gear for rotating in a second direction, opposite the first direction; a third, output gear; and
5 wherein:

6 the shifting means of the transmission comprises fourth and fifth gears; a
7 movable shaft mounting the fourth and fifth gears at spaced apart locations along said
8 movable shaft with the fifth gear maintained meshed with the third, output gear; said
9 movable shaft being mounted for arcuate movement between said first position, in which the
10 fourth gear meshes with the first gear for rotating the fifth gear with the first gear and said
11 second position, in which the fourth gear meshes with the second gear for rotating the fifth
12 gear with the second gear; and wherein:

13 said connecting means operatively connects the pull cord means to said
14 movable shaft for moving said movable shaft to said first and second positions.

1 13 (original): The cover system of claim 12, said connecting means further
2 comprising first spring means comprising a first arm or section mounted proximate the
3 shifting means for rotating movement; a second arm or section mounted proximate one end
4 to and extending from the first arm and mounted proximate a second end to said movable
5 shaft of the shifting means for moving said movable shaft between and to said first and
6 second positions upon rotation of the first arm; and a third arm mounted to and extending
7 from the first arm for rotating the first arm, thereby pivoting the second arm and moving the
8 movable shaft between and to said two positions.

1 14 (original): The cover system of claim 11, wherein:

2 the transmission comprises: a first gear operatively mounted on the first
3 rotatable shaft for rotating therewith in a first direction; a second gear meshed with the first
4 gear for rotating in a second direction, opposite the first direction; and a third, output gear;
5 and wherein:

6 the shifting means of the transmission comprises fourth and fifth gears; a
7 movable shaft mounting the fourth and fifth gears at spaced apart locations along said
8 movable shaft with the fifth gear maintained meshed with the third, output gear; said
9 movable shaft being mounted for arcuate movement among and to said first position, in
10 which the fourth gear meshes with the first gear for rotating the fifth gear with the first gear,
11 said second position, in which the fourth gear meshes with the second gear for rotating the
12 fifth gear with the second gear, and a third, neutral position between said first and second
13 positions in which the fourth gear is disengaged from the first and second gears; and wherein:

14 said connecting means operatively connects the pull cord means to said
15 movable shaft for moving the movable shaft among and to said first, second and third
16 positions.

1 15 (original): The cover system of claim 14, said connecting further comprising:
2 first spring means comprising a first arm or section mounted proximate the
3 shifting means for rotating movement; a second arm or section mounted proximate one end
4 to and extending from the first arm and mounted proximate a second end to the movable
5 shaft of the shifting means for moving the movable shaft among and to said three positions
6 upon rotation of the first arm; and a third arm mounted to and extending from the first arm
7 for rotating the first arm, thereby pivoting the second arm and moving said movable shaft
8 among and to said three positions; and the third arm having an aperture therein receiving the
9 pull cord in sliding engagement such that pulling the pull cord in first and second directions
10 moves said movable shaft to said first and second positions; and
11 second spring means mounted proximate the first spring means and having a
12 detent positioned such that when the pull cord is released, the detent releasably engages the
13 first spring means and positions the first spring means in said neutral third position, and
14 disengages from the first spring when the pull cord is pulled in the first or second direction.